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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/462,337	ZEFFLER ET AL.	
	Examiner	Art Unit	
	DAVID S. KIM	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14,16-23,27 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14,16-23,27 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Art Unit: 2613

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 14, 16, and 17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko ("LaserNet – A fiber optic intrastate network (planning and engineering considerations)") in view of Widmer et al. (U.S. Patent No. 4,151,373, hereinafter "Widmer").

Regarding claim 14, Siperko discloses:

A method for a wavelength-division multiplex (p. 38, Table V) network that performs an optical, fiber-bound information transfer in a digitized form, comprising the steps of:

using a terminal (e.g., Fig. 8 or 9) to process useful information according to one of an optical encoding and an optical decoding (e.g., return-to-zero code (RZ) in Table X on p. 43);

performing one of:

feeding (e.g., Fig. 8 or 9) at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength (e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43), and

removing (e.g., Fig. 8 or 9) at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength (e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43);

transmitting collectively a plurality of signals having different wavelengths in an optical fiber (p. 38, Table V);

Siperko does not expressly disclose:

performing one of a generation and an analysis of the *signaling and control information* in one of the network terminator and in a further network element;

performing one of:

feeding the *signaling and control information* into the wavelength-division multiplex network, and

removing the *signaling and control information* from the wavelength-division multiplex network;

using a *time-division multiplex operation to transmit the signaling and control information* with the defined fundamental wavelength via the *same components* of the wavelength-division multiplex network as the corresponding useful information, wherein the *signaling and control information is capable of being modulated independently of the useful information*.

In other words, Siperko does not expressly provide teachings regarding the ***signaling and control information*** limitations of claim 14.

However, adding signaling and control information to communication networks as part of a method for performing optical, fiber-bound information transfer in a digitized form is an extremely well-known technique in the field of communications. Widmer provides an exemplary method for doing so:

A method for transmitting signaling and control information (Widmer, col. 1, lines 12-24) for a network that performs an information transfer in a digitized form, comprising the steps of:

performing one of a generation (Widmer, col. 7, lines 6-10) and an analysis (Widmer, col. 1, lines 15-20) of the signaling and control information in one of a network terminator and in a further network element (Widmer, another network terminator, not shown);

performing one of the steps of:

feeding (Widmer, col. 3, lines 18-21) the signaling and control information into the network, and

removing (Widmer, col. 3, lines 42-44) the signaling and control information from the network;

using a time-division multiplex operation (Widmer, Figs. 1-3a) to transmit the signaling and control information via the same components (Widmer, Fig. 4) of the network as those used to transmit the useful information, wherein the signaling and control information is capable of being modulated independently (Widmer, col. 1, lines 12-15; note separate "data source" and "extra information source" in Fig. 4) of the useful information,

wherein the signaling and control information includes a characteristic signal sequence (Widmer, col. 6, lines 50-55; col. 9, lines 1-6) by which the signaling and control information is capable of being identified in a signal stream of the useful information such that corresponding transmitters and receivers of the signaling and control information are synchronized.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the signaling and control information transmitting method of Widmer in the method of Siperko. One of ordinary skill in the art would have been motivated to do this since the method of Widmer shows a way to provide extra information that may be necessary in the method of Siperko. More exactly, notice that Siperko's method employs a PCM network (p. 38, Table V) for the transmission of voice channels. Widmer's method is also applicable to PCM networks (col. 1, l. 9-11, 24) for the transmission of voice channels. Widmer's method teaches a way to provide extra information that is necessary for important transmission functions in PCM networks, such as synchronization (col. 1, l. 9-24), which may be necessary in the method of Siperko.

Regarding claim 16, Siperko in view of Widmer discloses:

The method according to claim 14, further comprising the step of:

Transmitting the signaling and control information at regular time intervals T (Widmer, Fig. 3a, col. 4, lines 34-49) for a predetermined duration of T_{OH} (Widmer, m bits in Fig. 3a).

Regarding claim 17, Siperko in view of Widmer discloses:

The method according to claim 16, wherein each regular time interval T is a multiple of a characteristic clock pulse duration of the useful information (Widmer, col. 9, lines 44-57).

4. **Claims 18 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer as applied to the claims above, and further in view of Bingham et al. (U.S. Patent No. 5,644,573, hereinafter "Bingham") and Glisic et al. ("Efficiency of Digital Synchronous Communication Systems", hereinafter "Glisic").

Regarding claim 18, Siperko in view of Widmer discloses:

The method according to claim 16, wherein:

a synchronization between a transmitter and a receiver of the signaling and control information is accomplished by a characteristic signal being transmitted at brief intervals (Widmer, col. 6, lines 50-55; col. 9, lines 1-6).

Siperko in view of Widmer does not expressly disclose:

following the synchronization, the characteristic signal being transmitted at variable duration time intervals that gradually increase up to a duration of the regular time intervals T.

However, notice that the transmission of a characteristic signal at ***variable duration time intervals*** is known in the art, as disclosed by Bingham (col. 15, l. 15-43). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ such transmission of the characteristic signal of the prior art of record at variable duration time intervals. One of ordinary skill in the art would have been motivated to do this since such variability allows one to employ the characteristic signal with the flexibility to "adjust for changing circumstances" (Bingham, col. 15, l. 37) "in accordance with the needs of any particular system" (col. 15, l. 22-23).

Additionally, ***increasing*** such a variable duration time interval of a periodic transmission of a characteristic signal is obvious. That is, consider the transmission efficiency discussed in Glisic (p. 680, 1st full paragraph, "ratio of the information to the transmission bit rate"). An increased variable duration time interval corresponds to less frequent transmissions of the characteristic signal, which corresponds to more available time for transmissions of data, which corresponds to a higher ratio of information to transmission bit rate, or higher transmission efficiency. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to increase the variable duration time interval of the periodic transmission of the characteristic signal of the prior art of record. One of ordinary skill in the art would have been motivated to do this since doing so could result in higher transmission efficiency, as discussed above.

Moreover, performing this increasing step ***gradually*** is obvious. That is, in comparison to other types of transitions, gradual transitions are generally known to provide the benefit of smoother transitions from one state to another state. In contrast, abrupt transitions could lead to a higher probability of disruptions in synchronization.

Furthermore, this obviousness argument notes that this limitation regarding the synchronization does not appear to constitute the thrust of any particular inventive effort by the Applicant. That is, the specification appears to discuss this limitation without any particular recognition of inventive effort (Applicant's specification, p. 5, l. 24-27).

Regarding claim 28, claim 28 is a method claim that corresponds to a coherent combination of the limitations in method claims 14 and 16-18. Since all these claims are rejected under Siperko in view of Widmer, Bingham, and Glisic, all the limitations of method claim 28 are addressed by the teachings of these references, including considerations of obvious variations of these teachings. Additionally, Siperko in view of Widmer, Bingham, and Glisic coherently teaches the limitations in claims 14 and 16-18. That is, the limitations in claims 14 and 16-18 are not divergently taught under Siperko in view of Widmer, Bingham, and Glisic. Therefore, the recited steps in the coherent combination of the limitations in claims 14 and 16-18 read on the corresponding steps in method claim 28.

5. **Claims 19-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer as applied to claim 16 above, and further in view of Bingham.

Regarding claim 19, Siperko in view of Widmer discloses all the limitations of claim 19 except for the time interval δ. Bingham discloses such a time interval (Bingham, time intervals S1, S2, and S3 in Fig. 3). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the time interval of Bingham in the signal and control information transmission of Widmer. One of ordinary skill in the art would have been motivated to do this to provide the benefits of "a variety of control type functions such as synchronization of new remote units, transmission channel quality checking and handling data transfer requests" (Bingham, abstract).

Regarding claim 20, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 19, further comprising the steps of:

during the interruption lasting for the duration of $T_{OH} + 2\delta$ resulting from the transmission of the signaling and control information, buffering (Widmer, Fig. 3b, col. 4, lines 50-54) the useful information in a transmitting terminal equipment (Widmer, Fig 4); and

during an intervening interval with a duration of $T - (T_{OH} + 2\delta)$, transmitting the useful information at such an increased bit rate that an average bit rate corresponds to an uninterrupted useful information transfer (Widmer, col. 2, lines 29-52).

Regarding claim 21, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, wherein the transmitting terminal equipment includes shift registers (Widmer, col. 7, lines 22-29).

Regarding claim 22, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, further comprising the steps of:

causing the transmitting terminal equipment to reserve time gaps of the duration $T_{OH} + 2\delta$ in the useful information; and

causing the transmitting terminal equipment to signal a temporal position (Widmer, col. 4, lines 60-62) of the reserved time gaps via the network terminator to a network element (Widmer, col. 4, lines 61-62) transmitting the signaling and control information.

Regarding claim 23, Siperko in view of Widmer, further in view of Bingham discloses:

The method according to claim 20, further comprising the steps of:

causing the network terminator to inform the transmitting terminal equipment of when (Widmer, col. 4, line 56 – col. 7, line 39) a time gap having the duration of $T_{OH} + 2\delta$ in the useful information is to be reserved for the transmission of the signaling and control information; and

causing the network terminator to inform the transmitting terminal equipment of when (Widmer, col. 6, lines 39-49) the useful information is to be buffered.

6. **Claim 27** is rejected under 35 U.S.C. 103(a) as being unpatentable over Siperko in view of Widmer, further in view of Bingham, as applied to claim 20 above, and further in view of Choquet (U.S. Patent No. 4,330,858).

Siperko in view of Widmer, further in view of Bingham, discloses:

causing the network terminator to communicate (Widmer, col. 4, lines 60-62) the signaling and control information to the transmitting terminal;

causing the transmitting terminal to optically encode (Siperko, e.g., return-to-zero code (RZ) in Table X on p. 43) the signaling and control information and transmit the signaling and control information via the wavelength-division multiplex network; and

causing a receiving terminal provided with the encoded useful information to:

decode (Siperko, e.g., return-to-zero code (RZ) in Table X on p. 43) the signaling and control information, and

filter out (Widmer, col. 3, lines 42-44) the signaling and control information from the useful information.

Siperko in view of Widmer, further in view of Bingham, does not expressly disclose:

causing a receiving terminal provided with the encoded useful information to

communicate the signaling and control information to an upstream receiver-end network terminator.

Choquet teaches causing such a receiving terminal (Choquet, Fig. 5) to communicate signaling and control information to supervisory equipment (Choquet, col. 2, lines 25-33). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Choquet by communicating the signaling and control information to an upstream receiver-end network terminator in the method of Siperko in view of Widmer, further in view of Bingham. One of ordinary skill in the art would have been motivated to do this so since "it has been found costly and otherwise undesirable to provide special modems or special separate communication channels for handling supervisory messages. It is preferable that supervisory messages be communicated by facilities which are no more expensive and require no greater frequency bandwidth than the facilities that otherwise would be needed to handle normal message traffic in the complete absence of any supervisory messages" (Choquet, col. 1, lines 27-35). The supervisory messages of Choquet correspond to the signaling and control information of Siperko in view of Widmer, further in view of Bingham. The final end receiver of the useful information signal would have no use for signaling and control information related to the network; conversely, other components, such as network terminators, depend on such signaling and control information for proper operation.

Response to Arguments

7. Applicant's arguments filed 07 February 2008 have been fully considered but they are not persuasive. Applicant presents six salient points.

Regarding the first point, Applicant states:

> The Siperko article of 1985 concerns Microtel, Inc.'s planned fiber optic intrastate transmission network for Florida. Specifically, the Siperko reference walks through their proposed network and the fact they will use fiber optics. However, the Siperko reference is deficient in that it does not teach or describe all of the features of claim 14. Specifically, the **Siperko reference does not concern itself with signaling and control information - or even "overhead" information - which is a focus of the present invention.** Further, the Siperko reference does not teach or describe the various method steps of claim 14 *including using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information.*
>
> (REMARKS, p. 6, middle paragraph, emphasis Applicant's).

Examiner respectfully notes that the standing rejection already recognizes that neither Siperko nor Widmer *alone* teaches the invention of Applicant's claim 14. Accordingly, the standing rejection presented an obviousness argument that relies on the combination of Siperko and Widmer. Notice that the standing rejection relies on **Widmer** for teachings regarding **signaling and control information**. The combination of Siperko and Widmer teaches:

> *including using a time-division multiplex operation* (Widmer, Figs. 1-3a) *to transmit the signaling and control information with the defined fundamental wavelength* (Siperko, e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43) *via the same components* (Widmer, Fig. 4) *of the wavelength-division multiplex* (Siperko, p. 38, Table V) *network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently* (Widmer, col. 1, lines 12-15; note separate "data source" and "extra information source" in Fig. 4) *of the useful information*.

Thus, this point is not persuasive.

Regarding the second point, Applicant states:

> The Widmer reference purportedly concerns a system for inserting extra-information bits into a bit sequence to be transmitted over a transmission channel and for suppressing such bits from the transmitted bit sequence, an inserter converting an input bit sequence which it receives at a first repetition frequency into a second repetition frequency, and a suppressor restoring the original input bit sequence which it receives from the transmitter at the second repetition frequency. **The Widmer reference *does not concern optical, fiber-bound information transfer or any wavelength-division multiplex network* as in claim 14.**
>
> (REMARKS, p. 6, last full paragraph, emphasis Applicant's).

Examiner respectfully notes that the standing rejection already recognizes that neither Siperko nor Widmer *alone* teaches the invention of Applicant's claim 14. Accordingly, the standing rejection presented an obviousness argument that relies on the combination of Siperko and Widmer. Notice that the standing rejection relies on **Siperko** for teachings regarding **optical, fiber-bound information transfer or any wavelength-division multiplex network**. Thus, this point is not persuasive.

Regarding the third point, Applicant states:

> Applicants maintain that *neither* the Siperko reference nor the Widmer reference (and thus, even when viewing both the Siperko and Widmer references together they still lack features) teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element;

> performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14. **The Siperko reference appears to concern itself with the various logistics (budget concerns et al.) of an intrastate network along with the added detail of the use of fiber optics. The Widmar reference appears to merely describe an old 1977 system in which extra-information bits are inserted into a bit sequence to be transmitted over a transmission channel, the extra-information bits being suppressed from the transmitted bit sequence.** The Widmar reference does not describe the system of claim 14.
>
> (REMARKS, p. 6-7, bridging paragraph, emphasis Applicant's).

Examiner respectfully notes that the standing rejection already recognizes that neither Siperko nor Widmer *alone* teaches the invention of Applicant's claim 14. Accordingly, the standing rejection presented an obviousness argument that relies on the combination of Siperko and Widmer. The combination of Siperko and Widmer teaches:

> performing a generation (Widmer, col. 7, lines 6-10) or an analysis (Widmer, col. 1, lines 15-20) of the signaling and control information in one of the network terminator and in a further network element (Widmer, another network terminator, not shown); performing one of the steps of feeding (Widmer, col. 3, lines 18-21) the signaling and control information into the wavelength-division multiplex (Siperko, p. 38, Table V) network, and removing (Widmer, col. 3, lines 42-44) the signaling and control information from the wavelength-division multiplex (Siperko, p. 38, Table V) network; and using a time-division multiplex operation (Widmer, Figs. 1-3a) to transmit the signaling and control information with the defined fundamental wavelength (Siperko, e.g., 1550 nm on p. 42, col. 1 or 1310 nm in Table X on p. 43) via the same components (Widmer, Fig. 4) of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently (Widmer, col. 1, lines 12-15; note separate “data source” and “extra information source” in Fig. 4) of the useful information, as in claim 14.

Thus, Examiner respectfully maintains that the combination of Siperko and Widmer does not lack the stated features.

Regarding the emphasized portion of this point, Examiner notes that Applicant presents one characterization of Siperko and Widmer. Examiner respectfully notes that the standing rejection presents another valid characterization of Siperko and Widmer (quoted from the treatment of claim 14 above):

> At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to implement the signaling and control information transmitting method of Widmer in the method of Siperko. One of ordinary skill in the art would have been motivated to do this since the method of Widmer shows a way to provide extra information that may be necessary in the method of Siperko. More exactly, notice that Siperko's method employs a PCM network (p. 38, Table V) for the transmission of voice channels. Widmer's method is also applicable to PCM networks (col. 1, l. 9-11, 24) for the transmission of voice channels. Widmer's method teaches a way to provide extra information that is necessary for important transmission functions in PCM networks, such as synchronization (col. 1, l. 9-24), which may be necessary in the method of Siperko.

Examiner respectfully maintains that this valid characterization of the standing rejection has its own merits of persuasiveness. Applicant's characterization of Siperko and Widmer does not address or overcome the merits of the standing rejection. Regardless of Siperko's concerns ("various logistics (budget concerns et al.) of an intrastate network along with the added detail of the use of fiber optics"), these concerns do not remove the fact that the fiber optic network teachings of Siperko are known in the field of art. Similarly, regardless of Widmer's age ("an old 1977 system in which extra-information bits are inserted into a bit sequence to be transmitted over a transmission channel, the extra-information bits being suppressed fro the transmitted bit sequence"), Widmer's age does not remove the fact that the extra-information bits teachings of Widmer are known in the field of art. The standing rejections show how one of ordinary skill in the art could combine these objective teachings to show that Applicant's invention is unpatentable. The standing rejections also show how one of ordinary skill in the art could be motivated to form this combination. Thus, this point is not persuasive.

Regarding the fourth point, Applicant states:

> Claim 18 depends from claim 14 and is therefore allowable over the Siperko and Widmer references for at least the same reasons as claim 14. The Bingham and Glisic references do not cure the deficiencies of the Siperko and Widmer references when in combination. Specifically, the Bingham reference refers to a method for coordinating communications between a plurality of remote units and a central unit to facilitate communications using a frame based discrete multi-tone (DMT) transmission scheme, where synchronized quiet times are provided periodically in the upstream communications. **The Bingham reference does not appear to teach or describe at least** the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; ***including removing the signaling and control information from the wavelength-division multiplex network;*** and *using a time-division multiplex operation to transmit the*

> *signaling and control information with the deigned fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information*, wherein *the signaling and control information is capable of being modulated independently of the useful information*, ***wherein the signaling and control information includes a characteristic signal sequence by which the signaling and control information is capable of being identified in a signal stream of the useful information such that corresponding transmitters and receivers of the signaling and control information are synchronized***, as in claim 14 (and thus, claim 18) as discussed above. Further, the fourth reference cited - the Glisic reference - does not teach or describe these missing features.
>
> Claim 28 recites features analogous to those of claim 18 and is allowable for at least the same reasons.
>
> (REMARKS, p. 7-8, bridging paragraph, emphasis Applicant's).

Examiner respectfully notes that the standing rejections do not rely on Bingham or Glisic to address these limitations. Rather, the standing rejections rely on Siperko and Widmer to address these limitations. See the treatment of claim 14 above. Thus, this point is not persuasive.

Regarding the fifth point, Applicant states:

> Claims 19 to 23 depend from claim 14 and are therefore allowable over the Siperko and Widmer references for at least the same reasons as claim 14. The Bingham reference does not cure the deficiencies of the Siperko and Widmer references when in combination. Specifically, the Bingham reference refers to a method for coordinating communications between a plurality of remote units and a central unit to facilitate communications using a frame based discrete multi-tone (DMT) transmission scheme, where synchronized quiet times are provided periodically in the upstream communications. The Bingham reference does not appear to teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14 (and thus, claims 19 to 23) as discussed above.
>
> (REMARKS, p. 8, middle paragraph).

Examiner respectfully notes that the standing rejections do not rely on Bingham to address these limitations. Rather, the standing rejections rely on Siperko and Widmer to address these limitations. See the treatment of claim 14 above. Thus, this point is not persuasive.

Regarding the sixth point, Applicant states:

> Claim 27 depends from claim 14 and is therefore allowable over the Siperko, Widmer, and Bingham references for at least the same reasons as claim 14 (see discussion re claims 19 to 23).

> The Choquet reference does not cure the deficiencies of the Siperko, Widmer, and Bingham references when in combination.
>
> The Choquet reference refers to a time domain supervisory channel for data terminal equipment which uses a common channel to carry both normal and supervisory messages, the supervisory messages being inserted into the message stream during intervals between normal messages via setting 1 enabling data to pass from the normal message generator directly to the channel, setting 2 enabling data to pass indirectly from the normal message generator through a delay line to the channel, and setting 3 enabling data to pass from the supervisory message generator to the channel. The Choquet reference does not appear to teach or describe at least the features of performing a generation or an analysis of the signaling and control information in one of the network terminator and in a further network element; performing one of the steps of feeding the signaling and control information into the wavelength-division multiplex network, and removing the signaling and control information from the wavelength-division multiplex network; and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 27, as discussed above.
>
> (REMARKS, p. 8, last paragraph – p. 9, 1st full paragraph).

Examiner respectfully notes that the standing rejections do not rely on Choquet to address these limitations. Rather, the standing rejections rely on Siperko and Widmer to address these limitations. See the treatment of claim 14 above. Thus, this point is not persuasive.

Summarily, Applicant's arguments are not persuasive. Accordingly, Examiner respectfully maintains the standing rejections.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID S. KIM whose telephone number is (571)272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S. K./
Examiner, Art Unit 2613

/Kenneth N Vanderpuye/
Supervisory Patent Examiner, Art Unit 2613